Amendments to the Claims:

1. (Previously Presented) A method for correlating raw transducer data in a system of transducers comprising the steps of:

communicating transducer data in a common format;

characterizing the transducer data and relationships between transducers in a common format;

defining interdependencies of transducers for modeling a system; and

time correlating the data from the various transducers.

2. (Previously Presented) The method of claim 1 wherein the step of correlating the transducer data comprises the step of communicating the transducer in a common format.

3. (Previously Presented) The method of claim 1 wherein the transducer data produces measurements of physical parameters.

4. (Previously Presented) The method of claim 3 wherein measurements comprise samples of one or more physical parameters.

5. (Currently Amended) The method of claim 4 wherein the one or more samples each comprise a transducer characteristic frames.

6 (Previously Presented) The method of claim 5 wherein the transducer characteristic frames are communicated in clusters.

7. (Previously Presented) The method of claim 2 wherein the data is communicated in clusters.

8. (Previously Presented) The method of claim 7 wherein the clusters have time tags.

9. (Previously Presented) The method of claim 8, wherein the time tag is representative of the state of a system clock at the time of the first sample of the cluster.

10. (Previously Presented) The method of claim 2 wherein the data is communicated in a transducer markup language.

11. (Previously Presented) The method of claim 2 wherein the transducer data is communicated without loss of fidelity.

12. (Previously Presented) The method of claim 2 wherein the basis of the common format is a transducer characteristic frame.

13. (Previously Presented) The method of claim 12 wherein the transducer characteristic frame has a dimension of ~~at least~~ 0, 1, 2, 3, or greater.

14. (Previously Presented) The method of claim 1 wherein the common characterization expresses spatial, or temporal, or other relations between samples using a common transducer characteristic frame.

15. (Previously Presented) The method of claim 14, wherein N spatial coordinates of each sample are expressed in a transducer characteristic frame.

16. (Previously Presented) The method of claim 15, wherein N is the dimensionality of the TCF.

17. (Previously Presented) The method of claim 1 comprising the step of expressing arbitrary properties and characteristics of transducers in a transducer characteristic frame.

18. (Previously Presented) The method of claim 1 comprising using a transducer to model time varying properties of another transducer.

19. (Previously Presented) The method of claim 16, comprising the step of specifying interdependencies between transducers as at least one of attached; dangling; position; and attitude; and derivatives therof.

20. (Previously Presented) The method of claim 1 further comprising the step of adding any number of additional transducers to the system and following the previously recited steps.

21. (Previously Presented) The method of claim 1 comprising the step of calculating a specific time tag using a temporal transducer characteristic frame model.

22. (Previously Presented) The method of claim 20 comprising calculating transducer time varying properties by interpolating values form other transducers using the specific time tag.

23. (Previously Presented) The method of claim 20 comprising calculating external orientation of any transducer sample to a specified external reference system.

24. (Previously Presented) The method of claim 23 wherein the external reference system comprises at least one of an external transducer and an earth centered earth fixed reference system.

25 (Previously Presented) The method of claim 24 wherein transducers relate to an earth fixed reference system.

26. (Previously Presented) The method of claim 1 further comprising storing the correlated transducer data for retrieval and processing at a time after correlation.

27. (Withdrawn) Apparatus for the acquisition, archiving, exchanging, and processing of raw transducer data in a system of transducers producing corresponding outputs comprising:

a transducer adapter for each transducer responsive to the corresponding transducer output for producing a transducer markup language output representative of the data;

a transducer processor responsive to the transducer markup language output for processing the data.

28. (Withdrawn) Apparatus according to claim 27 wherein each transducer comprises at least one of a transmitter or receiver for transforming an energy to a digital electrical output.

29. (Withdrawn) Apparatus according to claim 28 wherein the transducer adapter comprises means for collecting a transducer output; means for translating the output into incremental measurements in digital format; and means for placing the measurements in a specified digital format.

30. (Withdrawn) Apparatus according to claim 29, wherein the transducer adapter supplies a trigger to indicate the first sample in each TCF.

31. (Withdrawn) Apparatus according to claim 29 wherein the specified digital format is characterized by a method comprising the steps of:

communicating transducer data in a common format;

characterizing the transducer data and relationships between transducers in a common format;

defining interdependencies of transducers for modeling a system; and

time correlating the data from the various transducers.

32. (Withdrawn) Apparatus according to claim 27 further comprising a system adapter for specifying relations between transducer adapters, sampling clusters in accordance with a system time and serializing outputs into one stream in transducer markup language.

33. (Withdrawn) Apparatus according to claim 27, wherein the transducer processor comprises means for receiving and parsing the transducer markup language data stream and for processing.

34. (Withdrawn) Apparatus according to claim 27 wherein the transducer processor comprises means for correlating the transducer data using dependency relationships specified by the system adapter.

35. (Withdrawn) Apparatus according to claim 27 wherein the transducer processor comprises means for calculating resultant exterior orientations relative to a common exterior reference system.

36. (Withdrawn) Apparatus according to claim 27 comprising means for calculating error accumulations of individual transducer measurement errors to a resultant system error.

37. (Previously Presented) Apparatus according to claim 24 further including display means for displaying selectable portions of the transducer data.

38. (Withdrawn) Apparatus according to claim 27 further comprising a data store for storing transducer markup language data from the system adapter and for outputting transducer markup language data to the transducer processor.

39. (Withdrawn) Apparatus according to claim 27 including a system adapter for two or more transducer adapters.

40. (Withdrawn) Apparatus according to claim 39 including one or more transducer processors for each system adapter.

41. (Withdrawn) Apparatus according to claim 39 including at least one data store between any system adapter and transducer processor.

42. (New) A method for correlating raw transducer data in a system of transducers, wherein the transducer data produces measurements of physical parameters in the form of samples thereof, and where the samples each comprise a transducer characteristic frame, comprising the steps of:

communicating transducer data in a common format;

characterizing the transducer data and relationships between transducers in a common format;

defining interdependencies of transducers for modeling a system; and

time correlating the data from the various transducers.

43. (New) The method of claim 42 wherein the transducer characteristic frames are communicated in clusters.

44. (New) A method for correlating raw transducer data in a system of transducers comprising the steps of:

communicating transducer data in a common format;

characterizing the transducer data and relationships between transducers in a common format expressing spatial, or temporal, or other relations between samples expressed in a transducer characteristic frame;

and wherein N coordinates of each sample are expressed in a transducer characteristic frame;

defining interdependencies of transducers for modeling a system; and

time correlating the data from the various transducers.

45. (New) A method for correlating raw transducer data in a system of transducers comprising the steps of:

communicating transducer data in a common format;

characterizing the transducer data and relationships between transducers in a common format;

calculating a specific time tag using a temporal transducer characteristic frame model;

defining interdependencies of transducers for modeling a system;

time correlating the data from the various transducers; and

calculating transducer time varying properties by interpolating values form other transducers using the specific time tag.

46. (New) A method for correlating raw transducer data in a system of transducers comprising the steps of:

communicating transducer data in a common format;

characterizing the transducer data and relationships between transducers in a common format;

defining interdependencies of transducers for modeling a system;

expressing arbitrary properties and characteristics of transducers ina transducer characteristic frame; and

time correlating the data from the various transducers